

CLAIMS

S&A > 1. A cable modem comprising:

2 a first interface for receiving data from a cable media; and

3 a pattern matching engine that evaluates patterns in the data that is received at the first

4 interface of the cable modem and that enables the determination of appropriate procedures for

5 treatment of the data.

0 1 2. The cable modem of claim 1 wherein the pattern matching engine is configured to

0 1 2 match addresses segments of the data that is received at the first interface of the cable modem.

0 1 3. The cable modem of claim 1 wherein the pattern matching engine is a programmable

0 2 pattern matching engine that may be programmed according to patterns that are desired to be

0 3 matched during various operations of the cable modem.

0 1 4. The cable modem of claim 1 wherein the pattern matching engine enables

0 2 determination of whether to accept a frame at the cable modem quicker than if the cable modem

0 3 were required to wait on processing at a central microprocessor.

1 5. The cable modem of claim 1 wherein the pattern matching engine enables pattern

2 matching of various length frame portions.

1 6. The cable modem of claim 5 wherein the various length frame portions are selected

2 from the group consisting of bit length, byte length, word length, double word length, kilobyte

3 length, and megabyte length.

- 1 7. A communication device for sending and receiving data comprising:
2 a receiving transducer for receiving data; and
3 a pattern matching engine configured to prevent the communication device from
4 processing data that matches a predetermined pattern.
- 1 8. The communication device of claim 7 wherein the communication device is a cable
2 modem.
- 1 9. The communication device of claim 8 wherein the receiving transducer receives the
2 data from a cable media.
- 1 10. The communication device of claim 7 wherein the pattern matching engine is a
2 programmable pattern matching engine that may be programmed to match a portion of a
3 plurality of types of frames that are received at the receiving transducer.
- 1 11. A method for a communication device to compare a predetermined pattern to a
2 pattern that corresponds to a portion of a data frame, the method comprising:
3 determining acceptable parameters for the data frames that are to be received at the
4 communication device;
5 programming the acceptable parameters into a pattern matching engine in the
6 communication device;
7 receiving a data frame at the communication device;
8 parsing the data frame to obtain a predetermined portion of the data frame; and
9 comparing the predetermined portion of the data frame with the acceptable parameters
10 stored in the pattern matching engine.

1 12. The method of claim 11 further comprising registering the result of the comparison
2 in a suitable format for access by a microprocessor.

1 13. The method of claim 12 further comprising reading the registered results with a
2 microprocessor such that the microprocessor may determine whether to drop or accept the data
3 frame that has been received at the communication device.

1 14. The method of claim 12 wherein the predetermined portion of the data frame is an
2 address portion of the data frame.

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